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| 10/656,121 | 09/08/2003 | Masayasu Sato | 117048 | 7049 |
| 25944 | 7590 | 08/29/2006 | EXAMINER | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | DUONG, THANH P | |
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1764

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,121

Applicant(s)

SATO ET AL.

Examiner

Tom P. Duong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/8/03; 12/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Publication Number 09-317452 (hereinafter JPN '452) in view of WO 94/13937. JPN '452 discloses an exhaust-gas purifying apparatus (Figure 3), comprising: an outer cylinder (41); a plurality of cylinder-shaped supports (43) disposed in the outer cylinder, and having an outer peripheral surface and an inner peripheral surface, at least two of the neighboring cylinder-shaped supports contacting with each other with the outer peripheral surfaces (Figure 3); and catalytic layer loaded on at least one the outer peripheral surface and inner peripheral surface of the cylinder-shaped supports (Section 0013). JPN '452 fails to disclose at least one of the cylinder-shaped supports has a ring-shaped cross-section with a cut-off, and is disposed in the outer cylinder in such an elastically deformed state that it expands in the centrifugal direction. WO 94/13937 teaches narrow slots 14, 15, and 16 are provided in the channel (Fig. 2) to allow the exhaust gas to flow from a plugged channel to its adjacent channel for continuous operation. Thus, it would have been obvious in view of WO 94/13937 to one

having ordinary skill in the art to modify the apparatus of JPN '452 with cut off in the cylinder support to facilitate in diverting gas flow from plugged channel to its adjacent channel.

2. Claims 1-6 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Publication Number 09-317452 (hereinafter JPN '452) in view of Pfefferle (4,402,662) or WO 99/64732. Regarding claims 1-2, and 9-10, JPN '452 discloses an exhaust-gas purifying apparatus (Figure 3), comprising: an outer cylinder (41); a plurality of cylinder-shaped supports (43) disposed in the outer cylinder, and having an outer peripheral surface and an inner peripheral surface, at least two of the neighboring cylinder-shaped supports contacting with each other with the outer peripheral surfaces (Figure 3); and catalytic layer loaded on least one the outer peripheral surface and inner peripheral surface of the cylinder-shaped supports (Section 0013). JPN '452 fails to disclose at least one of the cylinder-shaped supports has a ring-shaped cross-section with a cut-off, and is disposed in the outer cylinder in such an elastically deformed state that it expands in the centrifugal direction. Pfefferle '662 teaches it is desirable to provide the catalytic structure with a with slot 4 or "C" shaped slit cylinder configuration to provide a catalytic structure that can resist thermal shock from temperature gradient between the internal portion 3 and external portion 4. Thus, it would have been obvious in view of Pfefferle to one having ordinary skill in the art to modify the apparatus of JPN '452 with a ring-shaped cross-section with a cut-off as taught by Pfefferle in order to minimize thermal shock. Likewise, WO 99/64732 teaches the benefits of providing a compressible slotted cylinder 10 with perforations (page 5,

lines 28-32) to facilitate in inserting into the exhaust pipe and the friction force exerted between the outer surface of slotted cylinder 10 and the inner surface of the exhaust pipe holds the slotted cylinder 10 in place (Figures 2 and 4). Thus, it would have been obvious in view of WO 99/64732 to one having ordinary skill in the art to modify the cylinder body of JPN '452 with the slot or cut off as taught by WO 99/64732 in order to gain the above benefits. Regarding claims 3 and 4, JPN '452 discloses the shells can be welded to each other on the peripheral surfaces (Sections 0004-0006). Regarding claim 5, it is conventional to provide the cylinder-shaped support of a catalytic structure made of metallic material and it would have been obvious to do so here to provide a catalyst support with improved structural strength. Regarding claim 6, JPN '452 fails to disclose the cylinder supports are formed with a plurality of thru holes. Pfefferle '452 teaches cylinder-shaped support (1) with a plurality of radial passage 2 and such configuration facilitates mixing of the exhaust gas in radial flow. Thus, it would have been obvious in view of Pfefferle to one having ordinary skill in the art to modify the apparatus of JPN '452 with plurality of holes in the cylinder support to facilitate mixing of the exhaust gas in radial flow direction.

3. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (JPN '452 in view of Pfefferle '662 or WO 99/64732) and further in view of Strader (4,203,502). The applied references essentially disclose the claimed invention except a plurality of cylinder support groups disposed in the outer cylinder at predetermined intervals in the axial direction and the groups are disposed out of phase.

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Strader '502 teaches a plurality of gas conduit groups and each group in each of the chambers A, B, and C are out of phase of each other (Figs. 2-6). Such configuration suppresses the audible vibrations of the exhaust gas (Col. 1 – Col. 2) prior to leaving the muffler. Thus, it would have been obvious in view of Strader '502 to one having ordinary skill in the art to modify the apparatus of the applied references with a plurality of cylinder support groups as taught by Strader '502 to reduce the sound level of the exhaust gases.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 and 5-11 of copending Application No. 10/656,178. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending application 10/656,178 claims substantially the same subject matter of the claimed invention and the term "outer cylinder" of the instant claim is obvious alternative language of the term "mantle" of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

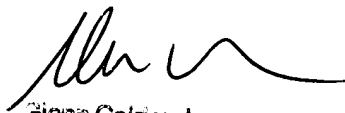
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P. Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Duong
August 18, 2006

TD



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700